DOCUMENT RESUME

ED 339 373 IR 053 824

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TITLE Library Development, Resource Sharing, and Networking among Higher Education Institutions in Papua New Guinea. Preliminary Report and Recommendations.
SPONS AGENCY Asia Foundation, New York, N.Y.
PUB DATE 20 Sep 91
NOTE 53p.
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Academic Libraries; Consultants; Databases; Developing Nations; Foreign Countries; Higher Education; Interviews; *Library Automation; *Library Development; Library Networks; Library Services; Policy Formation; Research Libraries; *Shared Library Resources
IDENTIFIERS *Papua New Guinea

ABSTRACT

This report presents recommendations for the upgrading of higher education information resources in Papua New Guinea (PNG) according to acceptable norms, effective sharing of resources through phased introduction of automation and networking, and the creation of a database of information resources. The report was based on a survey of 41 PNG libraries of various types; it identifies both the strengths and weaknesses in information resources and proposes a strategy for building centers of excellence as possible nodes for automation and networking. It is noted that, in view of the difficult economic and financial situations that PNG is facing, the task of building adequate library and information resources to meet the needs of education, research, and services is monumental. To meet the challenges, the report presents a set of recommendations for policy considerations and for necessary implementation plans and actions. The justifications for these recommendations are also given in the report. The following items are appended: the names of individuals who were consulted or interviewed; a copy of the National Library Service of PNG's "Basic Standards for College Libraries"; and lists of library and information resources in the six major libraries, in the Teachers College libraries, and in other college libraries. (26 references) (MAB)

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Library Development, Resource Sharing, and Networking Among Higher Education Institutions in Papua New Guinea Preliminary Report and Recommendations

By

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At the Request of

Commission for Higher Education
and
Library Council
of
The Government of Papua New Guinea

Under the Sponsorship of
The Asia Foundation

September 20, 1991
Athens, Ohio 45701, U.S.A.

IR 053 824

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Library Development, Resource Sharing and Networking
Among Higher Education Institutions in Papua New Guinea
Preliminary Report and Recommendations

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EXECUTIVE SUMMARY

In accordance with the project proposal for resource sharing and networking of higher education information resources in Papua New Guinea (PNG) drawn up by the Commission for Higher Education (CHE) and the Library Council (LC), this consultant was engaged by the Asia Foundation to undertake a survey of higher education information resources in Papua New Guinea and to prepare a report with recommendations for the upgrading of resources according to acceptable norms, effective sharing of resources through phased introduction of automation and networking, and the creation of a database of information resources.

Through his visit to PNG from the 17th of August to the 6th of September, 1991 the consultant met with many educational officials, administrators, teachers, and librarians and visited--as could be arranged within the time allowed--a large number of colleges and universities and their libraries throughout the Country: Port Moresby, Goroka, Lae, Madang, Mt. Hagen, Rabaul, and Wewak. In addition, he visited the National Library and its National Archives and Public Records Services, the libraries of the Department of Agriculture and Livestock and the Department of Health, the libraries of the PNG Forest Research Institute and the PNG Institute of Medical Research, several provincial public libraries, the libraries of a national high school and a provincial demonstration high school, the Liklik Buk Information Center of the Appropriate Technology Development Institute, and the Library of Melanesian Institute. Altogether, a total of 41 libraries of various types in seven cities were visited during the three-week consultancy (listed in Appendix 1).

Based on his survey of this wide-range of libraries and information resources, taking into consideration of the national environment and needs of PNG, the consultant developed his preliminary report and recommendations as defined in the terms of reference. The report identifies both the strengths and weaknesses in information resources and proposes a strategy for building centers of excellence as possible nodes for automation and networking.

In view of the difficult economic and financial situations the Country is facing and the inadequate support most of the libraries receive, the task of building adequate library and information resources to meet the needs of education, research, and service is monumental to say the least. Some of the problems are further compounded by the over-proliferation of small colleges, which inflates costs and reduces operational efficiency--a fact recognized in the 1990 National Higher Education Plan. To meet the challenges, the consultant has prepared a set of recommendations for policy considerations and for necessary implementation plans and actions. The justifications for these recommendations are given in the report.

It is hoped that this preliminary report will generate healthy discussions among those interested in the improvement of higher education in PNG in general and in the upgrading of the library and information resources in particular. From these should emerge a coordinated and determined effort to bring about a phased introduction of library networking employing appropriate computer and information technologies for effective sharing of resources and much improved library services.

KEY RECOMMENDATIONS

National Approaches

1. Create within the CHE Secretariat a senior position for a Library Services Coordinator to plan and coordinate the development of library and information resources in institutions of higher education in PNG.

2. The Coordinator should be advised by the Library Council and should work with the Department of Education, the National Library, and other related government departments for the improvement of library and information resources in the nation's higher education institutions.

3. The Library Services Coordinator should draw up a national development plan for university and college libraries taking into consideration the recommendations made in this report.

4. The National Library should play a key role in the development of libraries in government agencies, community and high schools, as well as public libraries in the National Capital District and in all the provinces which complement and support the development of libraries in higher education institutions.

5. The "Basic Standards for College Libraries" developed by the National Library Service (see Appendix 2) needs to be re-examined and revised to upgrade minimum requirements for space, collections, services, staff, and funding as well as to add performance measurements.

6. A formula for funding the libraries should be developed to ensure that, even in difficult economic times, the libraries will not be stripped of minimum funding. The suggested criterion is that a minimum of 5% of an institution's operating budget should be spent for library resources (books, journals, audio-visual materials, etc.).

Development of PNGLINET

7. Adequate funding should be provided to those libraries which have been identified as having collections of major strength and recognized as centers of excellence. These national information resources within the education sector are found in the Main Library and Medical Library of the University of Papua New Guinea (UPNG), the Library of the University of Technology (Unitech), and the UPNG Goroka Teachers College. These libraries, each with strengths in certain subject areas--together with the National Library and the Administrative College

Library--should be considered as the major building blocks of a proposed Papua New Guinea Library and Information Network (PNGLINET).

8. As shown in Diagram I, "Building Blocks for a National Network of Library and Information Resources in PNG" (page 5), each of these libraries could serve as the resource center for other libraries in the same field of specialization.

- The Main Library of UPNG should serve as the national resource center for Humanities, Law, Sciences, Social Sciences, and PNG collection.

- The Medical Library of UPNG should serve as the national resource center for Medical and Allied Health Sciences.

- The Library of Goroka Teachers College of UPNG should serve as the national resource center for Education, Behavioral Science and Curriculum Materials.

- The Library of Unitech should serve as the national resource center for Agriculture, Business, Engineering, and Technology.

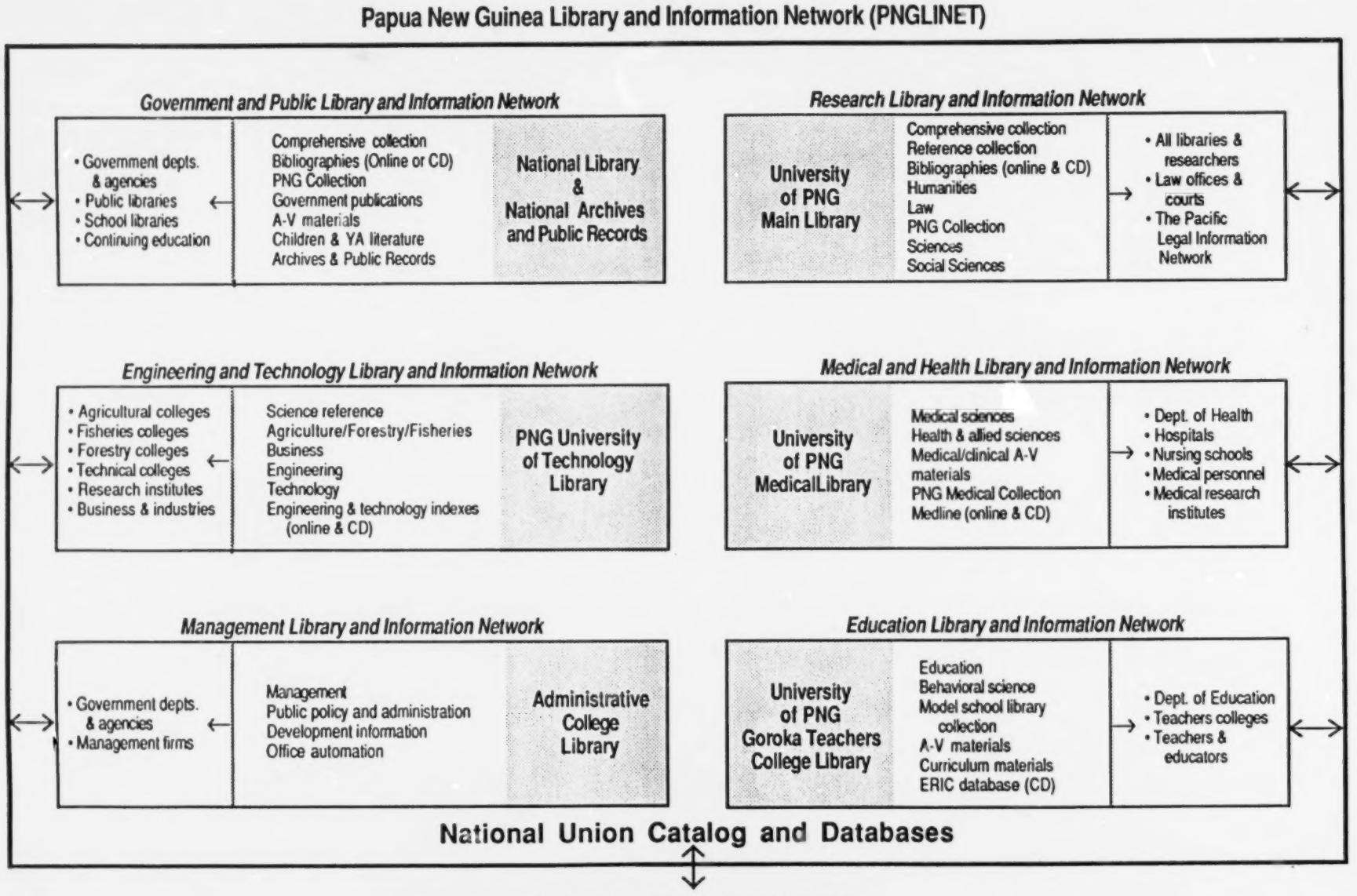
- The National Library should serve as the national resource center for all government departments, as well as all public and school libraries in the Country. It should also be the main center for all government publications, official depository for PNG publications, and the National Audio-visual Materials Center.

- The Library of Administrative College should serve as the national resource center for Management Science, Public Policy and Administration, and Development Information.

9. To house the growing library and information resources in these key libraries, adequate and functional library buildings with sufficient space for growth should be planned and constructed. These buildings should have temperature and humidity control to protect the collections and to provide a comfortable environment for their users. In preparation for computerization, adequate wiring for computers and electronic equipment (with provision for future growth and changes) should be included. Ample seating, preferably including a number of individualized study carrels, should be provided. Presently, all of the key libraries in higher education institutions need additional space.

10. For economical storage and preservation of less-used research materials which must be retained, a central storage facility with high density compact shelving should be built to be used by all libraries. Multiple copies of storage items can be given to interested libraries or discarded. The collections in the facility should

Diagram I: Building Blocks for a National Network of Library and Information Resources in PNG



be indicated in both the local catalog and the online union catalog for easy search and retrieval whenever needed.

11. A well developed library systems software capable of networking for the key libraries identified in Recommendation 7 should be selected and installed. Three-year capital funding totaling K900,000 should be appropriated to purchase both the software and hardware for the six resource libraries in a network environment, and an annual operating budget of K100,000 (with inflationary adjustment each year) should be provided to maintain the network making it accessible by computers from remote locations.

12. There should be a national database of the library and information resources in the computerized PNGLINET using the MARC international format for bibliographic records. The National Library should establish a PNG MARC for use by all libraries for shared cataloging to create the online national union catalog and bibliographic database. It is recommended that the PNG MARC closely adhere to a major international standard, such as LC MARC, UK MARC, or Ausmarc, to facilitate utilization of records prepared elsewhere with little or no conversion required.

13. The online national union catalog should contain all library and information resources, including books, serial titles and holding information, audio-visual materials, indexed journal articles, archival materials, local databases, etc. of the key libraries.

14. PNGLINET should serve as the gateway to library and information resources outside the country. PACESAT and other advanced telecommunication technologies should be used to access world-wide databases, including the OCLC Online Computer Library Center, Medline, Dialog, etc.

15. A Governing Board for PNGLINET should be created by the National Executive Council to carry out the planning, coordination, and implementation functions of the National Network. The Library Services Coordinator and the National Librarian should serve as the Chair and Deputy Chair of the Board respectively. University librarians of UPNG and Unitech, the chief librarians of the Medical Library, Goroka Teachers College, and Administrative College, and the Head of the Department of Library and Information Studies of UPNG should serve as Board Directors. The Board should appoint an Executive Director for day-to-day operations with adequate operating budget and staffing.

16. Should the proposed National Policy on Library and Information Services be adopted as an Act of Parliament, the PNGLINET Governing Board should be placed under the new governing body provided by the Act.

17. The selection of a fully developed and proven software package for the PNGLINET should be done by a committee of all participating libraries with the advice of an experienced and unbiased consultant. The needs and requirements of the network should be communicated through a "planning document" and a "request for proposal" prepared by the Committee.

18. For the development of information resources and services within each of the six sub-networks in Diagram I, there is a need to create a position of system librarian in each of the six resource libraries.

College and Other Academic Libraries

19. Because the library and information resources in most of the colleges are generally inadequate, major augmentation is needed to bring each to a minimum acceptable standard.

20. The transition of the community-school teachers colleges from a two-year certificate program to a three-year diploma program requires that the libraries of these colleges be greatly improved. Major remedial infusions of funding for additional staff and information resources should be considered a high priority for a period of five years. Minimum quantitative standards and performance measurements should be established and enforced. The recommendations made at the Library Workshop, 18-24 March 1990, by the participants from all teachers colleges under the sponsorship of the Teacher Education Division of the Department of Education were well thought-out and should be implemented.

21. Most of the libraries in nursing schools, technical colleges, and other special colleges show signs of long-standing neglect and generally are impoverished. Major efforts and actions are urgently needed to improve them. In working with the appropriate government departments, the Library Services Coordinator of CHE should develop guidelines and minimum standards for these libraries and seek annual funding for them.

22. To realize economies of scale for cost-effective operation, many of the small colleges with inferior programs and library resources should be merged into larger units or be incorporated with the universities or better established institutions.

23. A minimum of one full-time qualified librarian and two trained assistants should be required for every teachers college library. A minimum of one full-time qualified librarian and one trained assistant should be required for each of the technical, nursing, and special colleges.

24. The position classification and salary scale for library staff should be uniform and should be comparable to teaching staff with equal educational requirements and qualifications. There needs to be a clear career path for promotion and movement for both professional and support library staff. The staff classification and fringe benefits should be made equitable with university libraries.

25. Opportunities for in-service training and continuing education should be made available to college librarians to acquire new knowledge and skill for modern library and information services. The existing programs in the UPNG Department of Library and Information Studies should be expanded to meet such needs.

26. For each teachers college library, a minimum of 500 new books, and 50 audio-visual kits of relevance to the curriculum should be added to the collection each year and at least 50 journal subscriptions maintained. For each technical, nursing, and special college library, the minimum requirement should be adding 250 new books and 25 audio-visual kits of relevance to the curriculum each year and maintenance of 25 journal subscriptions. These materials should be carefully selected (rather than happenstance gifts) to support the curriculum and should be cataloged for easy access. Funding for acquisitions and cataloging are critically needed to remedy the outdated collections found in most of these libraries.

27. Centralized acquisitions and cataloging for college libraries should be explored to afford savings in both manpower and costs. For example, many library vendors abroad can provide attractive discounts for volume acquisitions. They can also provide cataloging service at little or no additional cost. With the establishment of PNGLINET, centralized and shared cataloging services can ease the manpower scarcity in small libraries. The National Library, in recent years, has provided central acquisitions and cataloging service for public and school libraries. It needs funding from both the National and provincial governments to sustain such a useful service.

28. To make better use of audio-visual materials, all college libraries should have a room equipped with appropriate A-V equipment. Teachers should be encouraged to use the room and to incorporate A-V materials into their instruction. The room and equipment should be well maintained.

29. Many of the library buildings in colleges badly need repair or expansion. Many require new and additional equipment and furniture. A survey should be made to determine such needs and funding for the improvements should be provided.

Complementary Library and Information Services Nationally

30. The Library Services Coordinator of CHE should develop a system for the collection of annual statistics and other relevant information. This data should be stored in computer and be analyzed for management purpose. A directory of library and information resources in the higher education institutions should be published annually.

31. Similarly, statistical data and other relevant information for all government, public, special, school libraries should be collected and kept by the National Library. A directory of these library and information resources should be published regularly. Such data compilations are valuable planning and management tools locally, regionally, and nationally.

32. To encourage and provide an incentive for sharing resources, those libraries with a net inter-library lending (i.e., number of items loaned to others minus number of items borrowed from other libraries) should receive a subsidy of five Kina per item from a special fund established by the Government.

33. The National Library and the Department of Education should promote indigenous publications in all subjects, especially for children and young adult audiences.

34. Instruction in library and learning skills should be a part of the regular college curriculum and available to all students. This is especially important for teachers college students who will be transmitting these skills to future generations. It is recommended that CHE and the Department of Education develop necessary guidelines and implementation plans.

35. Teachers college libraries should have a model collection for school libraries. It is necessary for future teachers to become familiar with such a collection.

36. The Department of Education and the National Library should help the teachers colleges develop such a model collection and also should place such a collection in every community school library in the nation. These collections should be updated annually.

37. The Department of Education, the National Library, and the Goroka Teachers College should develop a model collection for all the high school libraries. Such a collection should be placed in every high school library and be updated annually.

38. The library of each UPNG Extension Center located in a province could ideally be established as a cultural center combining the public library, the vocational

center library, and the University Center Library into one joint facility. Since the funding of all three are to be borne by the provincial government, such a shared facility will eliminate unnecessary duplication and be more cost-effective. Both the National Library and UPNG Library should assist in the design and establishment of these cultural centers.

39. An experimental interactive video communication network for instruction should be installed between the Extension Studies of UPNG at the Waigani Campus and a selected number of university extension centers. Such a video network will enable students at several extension centers to be taught by lecturers at the Waigani campus via the video network. Such a linkage could also be established between Goroka Teachers College and a selected number of community school teachers colleges.

40. All university center libraries and teachers college libraries could use such a communication network for information sharing and dissemination. For this to be effective, each library should have a telephone with a direct line and a telefacsimile machine.

Library Development, Resource Sharing, and Networking Among Higher Education Institutions in Papua New Guinea: Preliminary Report and Recommendations

REPORT

1. BACKGROUND

Education is critical to nation building. For the development of future leaders in the increasingly complex society of Papua New Guinea, higher education is key in providing much-needed human resources. According to the 1990 National Higher Education Plan, greater effort must be made by all sectors of the higher education community, including libraries, to define detailed requirements based on the visions of the Plan. To adequately support the activities in teaching, research and service, the libraries in all institutions of higher education must develop strong resources and services appropriate to the mission of their respective institutions, regardless whether public or private, large or small, urban or rural, and multi-or single-purpose. The quality of education in the institutions of higher education is largely dependent on the strengths of their respective library and information resources.

In this endeavor, to find a cost-effective, systematic, and coordinated way to develop the required library and information resources--which builds on existing strengths, minimizes unnecessary duplication, establishes common standards, encourages cooperation and resource sharing, plans for phased introduction of automation and networking, and finally, to create a national database of library and information resources--the Commission for Higher Education and the Library Council of Papua New Guinea developed a project proposal for "Resource Sharing and Networking of Higher Education Information Resources in Papua New Guinea" and sought the support of the Asia Foundation to engage Dr. Hwa-Wei Lee, Dean of University Libraries, Ohio University (Athens, Ohio 45701, U.S.A.) as the consultant to carry out "a survey of higher education information resources in Papua New Guinea with a view towards identifying collection strengths; upgrading resources in keeping with academic norms; preparing guidelines for the phased introduction of an automated network and creation of a centralized database of institutional resources."

The work of the consultant was undertaken from the 17th of August to the 6th of September, 1991. Working under the guidance of the Commission for Higher Education (CHE) and the Library Council (LC) and with the able assistance of Dr. John Evans, Head of the Department of Library and Information Studies, University of Papua New Guinea (UPNG), the consultant met with education officials, administrators, teaching staff, and librarians in related government offices and representative institutions in many parts of the

Country, including Port Moresby (the National Capital District), and other major cities and regions such as Goroka, Lae, Madang, Mt. Hagen, Rabaul, and Wewak. The extensive travels by airplane, car, bus, and walking was eye-opening and at times personally risky. The report that follows is based on the study and analysis of the data collected and interviews conducted.

The consultant wishes to acknowledge his deep gratitude to the Asia Foundation, Commission for Higher Education, Library Council, Department of Education, the Department of Library and Information Studies of UPNG, and all of the individuals he met throughout the assignment for their useful advice and support. He is especially indebted to Dr. Naomi T. Martin, Chair of CHE, Mr. Ruben San Mateo, Executive Director of the Secretariat and Deputy Chair of CHE, and Dr. Moseley Moramoro, OPE, Chair of the Library Council, for their visionary leadership in the development of higher education libraries and information resources as a necessary mean for quality education. Mr. Neil Nicholls, the National Librarian, Ms. Florence Griffin, UPNG Librarian, Mr. Deveni Temu, Unitech Librarian, Ms. Margaret Obi and Mr. Ismeal Isikel, both of the UPNG Department of Library and Information Studies, Mr. David Austin, Principal of Madang Teachers College, Mr. Richard Green, Principal of Mt. Hagen Technical College, and Mr. John Thomas, Deputy Librarian of Goroka Teachers College are also to be thanked for their extraordinary assistance.

This preliminary report is not intended as a final plan for action. Rather it is seen as a discussion paper to build consensus which will lead to policy decisions, implementation strategies, and action plans. The consultant sincerely invites all readers of this report to make comments for further improvement of this report.

2. TERMS OF REFERENCE

As stated in the Project Proposal, the precise **TERMS OF REFERENCE** for the consultancy were:

> "To undertake a survey of higher education information resources in Papua New Guinea; suggest norms for the upgrading of resources; develop guidelines for more effective resource sharing through the phased introduction of automation and networking and the creation of a database of information resources."

The **JUSTIFICATION** of the project as was stipulated in the proposal is quoted below:

> "At the present time the major information resources of Papua New Guinea for tertiary level teaching, research and developmental purposes are found largely in the country's higher education institutions.

While there are collection strengths and centers of excellence, these are not widely known or utilized outside the institutions' immediate community of users. At the same time, there are also deficiencies in resources as well as some overlap and duplication."

The proposed survey therefore will not only identify collection strengths and centers of excellence but will suggest norms for the upgrading of resources and the development of an environment for cooperation and resource sharing through the phased introduction of automation and networking.

The eventual creation of a centralized database of information resources would be of great benefit not only to higher education institutions but also to public and private sector agencies and their key role in the development process.

Higher education information resources which are coordinated, further upgraded and conveniently accessible can provide effective support for key development sectors in Papua New Guinea as well as more effectively serve teaching and research requirements."

The proposal further specified the **BENEFITS** expected as follows:

"(1) Strengthening support for quality academic programs.

(2) The identification of resources and highlighting of collection strengths and deficiencies.

(3) The development of norms for the progressive and systematic upgrading of resources.

(4) The development of guidelines to facilitate more effective resources sharing through automation and networking.

(5) The creation of a database of information resources."

3. PROJECT ACTIVITIES

Thanks to the arrangements made by Mr. Ruben San Mateo of CHE and Dr. John Evans of LC, the consultant meting with Mr. J. Tetaga, the Secretary of the Department of Education and several of his deputies before setting out to visit 26 of the 62 of those institutions of higher education, all with programs of post-grade 10 level (but excluding the 4 national high schools which provide grade 11 and 12 level courses), as defined by the

Commission in its National Higher Education Plan of 1990. Below is the list of the institutions visited:

Universities (2 of 2):

Papua New Guinea University of Technology (Lae)

Matheson Library
Liklik Buk Information Center

University of Papua New Guinea

The Michael Somare Library (Main Library at Port Moresby)
Medical Faculty Library (Port Moresby)
The Library of Goroka Teachers College (Goroka)
Two of UPNG's 10 extension studies centers (Madang and Rabaul)

Teachers Colleges for Community Schools (7 of 8):

Balob Teachers College (Lae)
Gaulim Teachers College (Rabaul)
Holy Trinity Teachers College (Mount Hagen)
Kabaleo Teachers College (Rabaul)
Madang Teachers College (Madang)
St. Benedict's Teachers College (Wewak)
St. Paul's Teachers College (Rabaul)

Technical Colleges (4 of 6):

Goroka Technical College (Goroka)
Lae Technical College (Lae)
Madang Technical College (Madang)
Mt. Hagen Technical College (Mt. Hagen)

Nursing Schools (3 of 11):

Lae School of Nursing (Lae)
Nazarene College of Nursing (Mt. Hagen)
Rabaul School of Nursing (Rabaul)

Allied Health Sciences (1 of 1):

College of Allied Health Sciences (Boroko)

Agricultural Colleges (2 of 4):

Highlands Agricultural College (Mt. Hagen)
Vudal Agricultural College (Rabaul)

Other institutions (2 of 8):

Administrative College
Port Moresby In-service College

Additionally, the consultant also visited the following 15 non-academic libraries:

National Library Service (Port Moresby)
National Archives and Public Records Services (a branch of the National Library; Port Moresby)
The Library of the Department of Agriculture and Livestock (Port Moresby)
The Library of the Department of Health (Port Moresby)
The Library of the PNG Forest Research Institute (Lae)
The Botany Library of the Botany Branch of PNG Forest Research Institute (Lae)
The Library of the PNG Institute of Medical Research (Goroka)
The Library of the Melanesian Institute (Goroka)
The City Public Library of Port Moresby (Port Moresby)
Goroka Public Library (Goroka)
Lae Public Library (Lae)
Madang Public Library (Madang)
Rabaul Public Library (Rabaul)
Goroka Demonstration High School Library (Goroka)
Passam National High School Library (Wewak)

Appendix 1 provides a complete list of those individuals consulted and/or interviewed by the consultant.

4. FACT FINDING

Through his visit to the 41 libraries, the consultant found that the best libraries were in the two universities, the National Library, and the Administrative College.

UNIVERSITY OF PAPUA NEW GUINEA

Started in 1966, the Main Library (Michael Somare Library) of the University has the Country's best and largest library collection. It contains about 400,000 volumes of books and subscribes to 1,500 journals. The collection is strong in general reference, humanities,

law, New Guinea Collection, Sciences and Social Sciences. The library is a member of the Asia-Pacific Information Network in the Social Sciences (APINESS), a UNESCO sponsored project. The library building is centrally located on the campus. It is a modern, air-conditioned building with adequate seating and is open to both university and non-university users. About 1,500 users entered the library daily. The library uses a microfiche catalog which is generated by the ADLIB system of Britain on a Prime Computer. The circulation module of the ADLIB system was installed this year and is being tested. Sets of the microfiche catalog have been distributed to other libraries. The Library also provides online search of DIALOG databases and two CD-ROM databases (Book in Print and ERIC). Two distinct collections can be considered as centers of excellence. They are:

(1) The 30,000-volume Law Collection, and within it is the special collection of the laws of the 19 Pacific island governments which is the cornerstone of the Pacific Legal Information Network (PALIN), a project supported by the Asia Foundation.

(2) The New Guinea Collection contains well-over 82,000 volumes and is regarded as the premier research collection in the world for materials relating to PNG and Irian Jaya. It collects every thing from books, pamphlets, journals, to theses, government and consultancy reports, microforms, newspapers, photographs and slides, maps, posters, stamps, offprints, church, mission and private records, and contemporary work of art. The catalog has been automated which also includes index to over 50,000 articles and monographs relevant to PNG and its environment.

The Medical Library, with its strong collection of some 46,000 volumes of books and approximately 380 journal titles, is a de facto national medical library in every sense. Its collection is strong in Medical Science and the Allied Health Sciences. Seventy percent of its clientele are health personnel located in hospitals and health centers throughout the Country. Since 1981, at the recommendation of the Department of Health, the Library has been designated by the World Health Organization as the National Focal Point Library in PNG for health sciences. It has online access to the Medline Database in the National Health Library in Canberra, Australia via microcomputer and modem. The searches, including photocopies, are free under an agreement between the Australian Government and the World Health Organization. The Library's microfiche catalog is also generated by the ADLIB System. Presently, the Library is in the process of setting up a CD-ROM system for the Cambridge database. In recent years, the library has deposited a selected collection of medical reference and key texts in 20 major hospitals around the nation for use by doctors and health personnel.

The Goroka Teachers College is an integral part of the University. It differs from the other teachers colleges in that it is the only one educating secondary school teachers while the others are for the training of community school teachers. The College Library

has one of the best collection on education and behavioral science. Its collections consists of 65,000 volumes of books and bound serials, 300 current journals, and 1,000 audio-visual materials. The library uses the automated cataloging system of the Main Library and has its own Bibliofile and ERIC CD-ROMs for searching. It also has one of the best equipped media center capable of making instructional video. The Library sees itself as the resource center for the Highland region.

PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Founded in 1967, Unitech Library is the second largest library in the country with its 120,000 volume collection, 2,000 current journal titles, and 2,400 audio-visual materials. The modern library building is spacious, air-conditioned, and carpeted providing a pleasant environment. In addition to the strength of its reference and general collections, the library collection is especially strong in Agriculture, Business, Engineering, and Technology. The Library's catalog is on CD-ROM, one of the very few in Asia, produced by the Brodart Company in the U.S. The catalog is updated twice a year. The Library also provides online computer searching of various databases free of charge and has available several CD-ROM databases.

THE NATIONAL LIBRARY

The National Library Service was created in 1975 by Cabinet directive. At that time, the National Archives (although created as a separate archival activity in 1962) became a branch of the National Library. Both the National Library and the National Archives and Public Records are housed in separate buildings but located next to each other. The collections of the National Library consist of 45,000 books, 400 current journals, and some 4,500 films and video cassettes. Besides being the official depository for PNG publications, the Library's reference collection, PNG collection, and film collection are considered as major national resources. The National Archives maintains valuable government records dating as far back as 1884. As a service to the nation, the National Library publishes the *Papua New Guinea National Bibliography* (bi-annual), the *National Union List of Serials*, and a number of directories and booklists. It also serves as the National ISBN Agency. Despite the government decisions for decentralization and funding cuts, the National Library has continued to provide vital services to public and school libraries in the provinces through centralized technical services, community school library book subsidy scheme, matching grants for high school libraries, and seminal grants for the College of Distance Education and vocational center libraries. It also provides online searching of a wide range of databases for libraries. These databases include both those created by the National Library itself and those can be accessed through the National Library of Australia. A number of databases on CD-ROM (Bookbank, Books in Print Plus, Bibliofile, and ERIC) are also available for use free of charge.

ADMINISTRATIVE COLLEGE

Founded in 1963, the library of Administrative College is one the oldest libraries in PNG. The building is air-conditioned and adequate in space. The collection of 46,240 books, 646 current journals, and over 300 audio-visual materials is particularly strong in Government, Management, Public Administration, and Office Automation.

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Other than the above major library and information resources, there are also a small number of special libraries with reasonably good collections. They are:

The Department of Agriculture and Livestock Library

PNG Forest Research Institute Library

PNG Institute of Medical Research Library

Port Moresby In-service College Library

The collections in these libraries have fewer than 40,000 volumes and fewer than 200 current journal subscriptions.

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For the rest of the libraries in institutions of higher education, the picture is unfortunately very sad, due to decreasing government funding in recent years.

Although varying greatly in quality and quantity among themselves, the libraries in the ten teachers colleges for community school teachers as shown in Appendix 4 are considered slightly better than those in the agriculture/fisheries/forestry colleges. The libraries in the technical and nursing colleges are even worse (see Appendix 5). Many do not measure up to the high school libraries that this consultant visited.

In general, the collections of these libraries are largely outdated because few recent books of relevance have been purchased. The only new stocks have been gifts (mostly from the Asia Foundation, British High Commission, churches, etc.). Few of the libraries can afford to subscribe journals. Many do not have any audio-visual materials or the equipment with which to use them. The library rooms in most cases are small and in need of repair. With the exception of teachers colleges, many college libraries do not have a full-time trained librarian to run the library. There is clear evidence of neglect by the college administration in the wake of funding cuts.

With the exception of the Port Moresby In-service College which has a larger library collection, Appendix 4 shows that among the other 9 teachers colleges, the library collections of books range between 2,719 and 32,000 volumes and current journal subscriptions between 7 and 41. Only one reported to have about 100 A-V kits. The libraries' annual materials budgets range from K700 to K4,800 and the number of library staff between 0.5 and 3. Four of the 9 use personal computers for cataloging and two also use them for circulation. Eight of the colleges are affiliated with a church organization. Some of these libraries are staffed by foreign volunteers and receive occasional donations of funds or books from foreign sources.

Evident in Appendix 5, the conditions are even worse for most of the government-run colleges. Most have neither library staff nor funds for library materials.

There are many reasons for the desolate situation in which most of these libraries find themselves. Common explanations include:

1. decreasing government funding,

2. lack of economies of scale: too few students and programs in each college,

3. absence of trained librarians,

4. low pay and low status of library positions which causes frequent turn-over,

5. lack of support by college administration and inadequate concern by teachers, and

6. outdated methods of instruction and learning.

The results of these inadequate library facilities is the obvious poor quality of college education which can, at best, be described as secondary education.

In talking with principals and teachers, the consultant was encouraged nevertheless that there is a strong desire to improve the current situation. For the teachers colleges in particular, with the introduction of a three-year diploma program in place of the former two-year certificate program, the need to upgrade library resources and facilities was expressed in a resolution adopted by the principals at the 1990 Annual Principals' Conference. The resolution stated:

> "The Annual Principals' Conference requests that the Association for Teacher Education, in collaboration with the Commission for Higher Education, submit a project for upgrading resources in libraries and develop computer link-ups amongst all college and university libraries in Papua New Guinea.

This upgrading is essential to the implementation of the three year diploma programme."

With reference to library proposals from technical colleges, Mr. T. Poesi, Assistant Secretary-Technical Education of the Department of Education, acknowledged in a letter to Dr. John Evans dated May 9, 1991 that "Most colleges have voiced their dissatisfaction over the present state of their library facilities and express a strong desire to improve them."

On behalf of agriculture colleges, Mr. Samuel Lahis, Director of Agricultural Education and Training, Department of Agriculture and Livestock, also expressed the need for special funding to improve library resources and facilities.

5. CHALLENGES AND OPPORTUNITIES

Despite the gloomy conditions which prevail among college libraries, there are many bright spots in the overall library development. The emphasis on quality higher education to meet the manpower needs of the nation, as emphasized in the 1990 National Higher Education Plan, has set the direction for the improvement of libraries serving higher education. The survey of higher education information resources in PNG undertaken by this consultant identified six strong centers of excellence with little overlap and great complementary strengths. The possibility and potential for a national network of library and information resources is present and ready. Since most of the cataloging records in the six major resource libraries are already in machine-readable format, a unified national bibliographic database can be created relatively easily. The good telecommunication system available in the country lends itself to computer networking. There is also an admirable spirit of cooperation among libraries to share resources and to make their collections and services available to others.

In Diagram I: "Building Blocks for a National Network of Library and Information Resources in PNG" (on p. 5), this consultant presents a plan for the formation of PAPUA NEW GUINEA LIBRARY AND INFORMATION NETWORK (PNGLINET). The national network is built on six foundation blocks. Each block is itself a sub-system of a special area encompassing a group of libraries and users.

- The University of PNG's Main Library could serve as the resource center of the RESEARCH LIBRARY AND INFORMATION NETWORK which would provide information services in Humanities, PNG collection, Sciences, and Social Sciences. The Law Library could be the resource center for law libraries and legal information users.

- The University of PNG's Medical Library could serve as the resource center of the MEDICAL AND HEALTH LIBRARY AND INFORMATION NETWORK

providing services to personnel in the Department of Health, hospitals, nursing schools, medical research institutes, and others.

- The University of PNG Goroka Teachers College Library could serve as the resource center of the EDUCATION LIBRARY AND INFORMATION NETWORK providing services to officials in the Department of Education and to teachers and students in other teachers colleges.

- The National Library and National Archives and Public Records could serve as the resource center of the GOVERNMENT AND PUBLIC LIBRARY AND INFORMATION NETWORK providing services to government departments and agencies, public and school libraries, and citizenry.

- The PNG University of Technology Library could serve as the resource center of the ENGINEERING AND TECHNOLOGY LIBRARY AND INFORMATION NETWORK providing services to businesses and industries, research institutes, and the agriculture, fisheries, forestry, and technical colleges.

- The Administrative College Library could serve as the resource center of the MANAGEMENT LIBRARY AND INFORMATION NETWORK providing services to government departments and agencies and to management firms.

The interconnection of these six sub-networks by computers and communications links will form PNGLINET. The effective networking of these six separate but inter-related sub-networks requires that a common computer software and hardware system be selected and used for all.

Considerable coordination will be needed in planning and developing PNGLINET. This may require the establishment of a national planning board either by the existing Library Council or by a cabinet appointed Board. Within CHE, a new position of Library Services Coordinator should be created to work with the libraries in the higher education sector. The position should have sufficient rank and authority to carry out its functions. The Library Services Coordinator of CHE, the National Librarian, chief librarians of the other major resource libraries, and the Head of the UPNG Department of Library and Information Studies should be members of the national planning board. The board should also include representatives from the Departments of Education, Finance and Planning, and Personnel Management.

To improve the library and information resources in the higher education institutions, dramatic efforts are needed to compensate for past deficiencies and to lay the foundation for networking and resource sharing.

In the development plan of the Library Services Coordinator, the following steps are suggested:

1. Seek adequate funding for the major resources libraries in the higher education sector: first, by restoring the previous funding level and second, by developing a formula whereby libraries receive a fixed percentage of an institution's operating funds for materials acquisition, staffing, and equipment. Capital funding for those libraries in need of building expansion or rehabilitation or a new building should be considered as a high priority.

2. Develop separate library standards for teachers colleges, technical colleges, nursing colleges, and others according to program needs. Adequate funding from appropriate sources should be required for these colleges to meet the standards.

3. Establish a network planning committee among the six major resources libraries to develop system requirements and specifications which can then be written into a PLANNING DOCUMENT and a REQUEST FOR PROPOSAL.

4. Review the other recommendations made by this consultant and plan to implement those deemed appropriate.

Improvement of library and information resources and the development of PNGLINET require not only the support of the Government but also close cooperation of those in the library profession. Although the National Library is only one of the six major library resources in the country, it has a significant role to play in the formation of the PNGLINET. The responsibilities of the National Library in this endeavor should be recognized and properly defined.

The Library Council of PNG which was established by Cabinet directive in 1975 should, according to its charge, advise the Government on the importance of establishing PNGLINET and should actively solicit necessary government support in all sectors and at all levels.

6. RECOMMENDATIONS AND JUSTIFICATIONS

In line with the project proposal and the terms of reference, the consultant wishes to submit the following recommendations, each with its justification, for review and possible adoption by the Commission for Higher Education and the Library Council of Papua of New Guinea.

National Approaches

1. Create within the CHE Secretariat a senior position for a Library Services Coordinator to plan and coordinate the development of library and information resources in institutions of higher education in PNG.

Justification: Improving libraries in the 62 institutions of higher education involving many government departments and each of the 19 provincial government will require a full-time position with sufficient rank within the Secretariat of CHE.

2. The Coordinator should be advised by the Library Council and should work with the Department of Education, the National Library, and other related government departments for the improvement of library and information resources in the nation's higher education institutions.

Justification: The Library Council was created by a Cabinet directive in 1975 to advise the Government on library and information services as well as cooperation between PNG libraries. The same directive also established the National Library Service. Both have significant roles to play in the overall improvement in the nation's library and information resources.

3. The Library Services Coordinator should draw up a national development plan for university and college libraries taking into consideration the recommendations made in this report.

Justification: There should be a plan for phased implementation of the recommendations made in this report after its acceptance and approval by CHE.

4. The National Library should play a key role in the development of libraries in government agencies, community and high schools, as well as public libraries in the National Capital District and in all the provinces which complement and support the development of libraries in higher education institutions.

Justification: In addition to the strength of its collections as major library and information resources in the nation, the National Library also provides valuable services to government agencies, community and high schools, public libraries, and the general citizenry.

5. The "Basic Standards for College Libraries" developed by the National Library Service (see Appendix 2) needs to be re-examined and revised to upgrade minimum requirements for space, collections, services, staff, and funding as well as to add certain performance measurements.

Justification: The current standards should be enhanced to include performance measurements for the qualitative improvement of college libraries.

6. A formula for funding libraries should be developed to ensure that, even in difficult economic times, the libraries will not be stripped of minimum funding. The suggested criterion is that a minimum of 5% of the institution's operating budget should be spent for library resources (books, journals, audio-visual materials, etc.).

Justification: The fact that most colleges currently provide little or no funding for acquisition of new library materials needs to be corrected. The identification of a fixed percentage of a college's operating budget for library acquisitions as an absolute minimum is necessary in times of financial crisis. The recommended level, 5%, is still less than the 6% committed at the University of Technology.

Development of PNGLINET

7. Adequate funding should be provided to those libraries which have been identified as having collections of major strength and recognized as centers of excellence. These national information resources within the education sector are found in the Main Library and Medical Library of the University of Papua New Guinea (UPNG), the Library of the University of Technology (Unitech), and the UPNG Goroka Teachers College. These libraries, each with strengths in certain subject areas--together with the National Library and the Administrative College Library--should be considered as the major building blocks of a proposed Papua New Guinea Library and Information Network (PNGLINET).

Justification: Adequate funding for the six major resource libraries should be considered as a wise investment for the nation's future. There is little unnecessary duplication in the information resources in these libraries. Each tends to complement the others.

8. As shown in Diagram I, "Building Blocks for a National Network of Library and Information Resources in PNG" (p. 5), each of these libraries could serve as the resource center for other libraries in the same field of specialization.

- The Main Library of UPNG should serve as the national resource center for Humanities, Law, Sciences, Social Sciences, and PNG collection.

- The Medical Library of UPNG should serve as the national resource center for Medical and Allied Health Sciences.

- The Library of Goroka Teachers College of UPNG should serve as the national resource center for Education, Behavioral Science and Curriculum Materials.

- The Library of Unitech should serve as the national resource center for Agriculture, Business, Engineering, and Technology.

- The National Library should serve as the national resource center for all government departments, as well as all public and school libraries in the Country. It should also be the main center for all government publications,

official depository for PNG publications, and the National Audio-visual Materials Center.

- The Library of Administrative College should serve as the national resource center for Management Science, Public Policy and Administration, and Development Information.

Justification: Assigning special responsibilities to each of the six major resource libraries to serve as a building block in the formation of a national network of library and information resources affords a rational and cost-effective way to build a comprehensive information reservoir.

9. To house the growing library and information resources in these key libraries, adequate and functional library buildings with sufficient space for growth should be planned and constructed. These buildings should have temperature and humidity control to protect the collections and to provide a comfortable environment for their users. In preparation for computerization, adequate wiring for computers and electronic equipment (with provision for future growth and changes) should be included. Ample seating, preferably including a number of individualized study carrels, should be provided. Presently, all of the key libraries in higher education institutions need additional space.

Justification: For the key resource libraries to properly carry out their responsibilities and fulfill their roles within the system, adequate and appropriate building facilities are needed.

10. For economical storage and preservation of less used research materials which must be retained, a central storage facility with high density compact shelving should be built to be used by all libraries. Multiple copies of storage items can be given to interested libraries or discarded. The collections in the facility should be indicated in both the local catalog and the online union catalog for easy search and retrieval whenever needed.

Justification: A central storage facility for less used library materials is an economical way to cope with the continual growth in library and information resources in the major resources libraries. Such a storage facility can be constructed at comparatively low cost to achieve considerable saving in per unit storage cost.

11. A well developed library systems software capable of networking for the key libraries identified in Recommendation 7 should be selected and installed. Three-year capital funding totalling K900,000 should be appropriated to purchase both the software and hardware for the six resource libraries in a network environment, and an annual operating budget of K100,000 (with inflationary adjustment each year) should be provided to maintain the network making it accessible by computers from remote locations.

Justification: The experiences of developed countries in recent years have indicated that for effective networking of library resources, it is preferable to select one proven system for use by all libraries in the network. A number of library systems now available are capable of creating a central database while permitting each library to maintain a high degree of local autonomy.

12. There should be a national database of the library and information resources in the computerized PNGLINET using the MARC international format for bibliographic records. The National Library should establish a PNG MARC for use by all libraries for shared cataloging to create the online national union catalog and bibliographic database. It is recommended that the PNG MARC closely adhere to a major international standard, such as LC MARC, UK MARC, or Ausmarc, to facilitate utilization of records prepared elsewhere with little or no conversion required.

Justification: The creation and maintenance of an up-to-date online union catalog using standard MARC format is a high priority for effective sharing of library and information resources. The OCLC Online Computer Library Center's online shared cataloging system offers a desirable model for development.

13. The online national union catalog should contain all library and information resources, including books, serial titles and holding information, audio-visual materials, indexed journal articles, archival materials, local databases, etc. of the key libraries.

Justification: To maximize the usefulness of the union catalog, as many types of library and information resources should be included as possible.

14. PNGLINET should serve as the gateway to library and information resources outside the country. PACESAT and other advanced telecommunication technologies should be used to access world-wide databases, including the OCLC Online Computer Library Center, Medline, Dialog, etc.

Justification: Access to and searching of remote databases and information resources world-wide are already available in many of the key resources libraries. These should be expanded to take advantage of new developments in computer and telecommunication technologies.

15. A Governing Board for PNGLINET should be created by the National Executive Council to carry out the planning, coordination, and implementation functions of the National Network. The Library Services Coordinator and the National Librarian should serve as the Chair and Deputy Chair of the Board respectively. University librarians of UPNG and Unitech, the chief librarians of the Medical Library, Goroka Teachers College, and Administrative College, and the Head of

the Department of Library and Information Studies of UPNG should serve as Board Directors. The Board should appoint an Executive Director for day-to-day operations with adequate operating budget and staffing.

Justification: At the appropriate stage of development for PNGLINET, a governing structure should be put in place to ensure full participation of all major resources libraries and key leaders. Adequate funding and staffing should be provided for effective implementation.

16. Should the proposed National Policy on Library and Information Services be adopted as an Act of Parliament, the PNGLINET Governing Board should be placed under the new governing body provided by the Act.

Justification: This is to avoid unnecessary duplication and competition between two boards with overlapping responsibilities.

17. The selection of a fully developed and proven software package for the PNGLINET should be done by a committee of all participating libraries with the advice of an experienced and unbiased consultant. The needs and requirements of the network should be communicated through a "planning document" and a "request for proposal" prepared by the Committee.

Justification: With a number of excellent software packages now available, selection should be done openly, objectively, and rationally (offering opportunities for meaningful inputs by the institutions to be included). The needs and requirements of the network should be carefully documented.

18. For the development of information resources and services within each of the six sub-networks in Diagram I (p. 5), there is a need to create a position of system librarian in each of the six resource libraries.

Justification: The position is needed to develop and implement each of the sub-networks under the overall network plan.

College and Other Academic Libraries

19. Because the library and information resources in most of the colleges are generally inadequate, major augmentation is needed to bring each to a minimum acceptable standard.

Justification: The obvious inadequacies of the college libraries, documented in Appendices 3, 4 and 5, justify the urgency of remedial measures.

20. The transition of the community-school teachers colleges from a two-year certificate program to a three-year diploma program requires that the libraries of these colleges be greatly improved. Major remedial infusions of funding for additional staff and information resources should be considered a high priority for a period of five years. Minimum quantitative standards and performance measurements should be established and enforced. The recommendations made at the Library Workshop, 18-24 March 1990, by the participants from all teachers colleges under the sponsorship of the Teacher Education Division of the Department of Education were well thought-out and should be implemented.

Justification: The resolution adopted at the 1990 Annual Principals' Conference of the teachers colleges expressed the grave need for upgrading library and information resources in these colleges.

21. Most of the libraries in nursing schools, technical colleges, and other special colleges show sign of long-standing neglect and generally are impoverished. Major efforts and actions are urgently needed to improve them. In working with the appropriate government departments, the Library Services Coordinator of CHE should develop guidelines and minimum standards for these libraries and seek annual funding for them.

Justification: As a result of the lack of funding and staffing, compounded by a long period of neglect, most of these libraries have little left to be called a library. The quality of education in these colleges is clearly in doubt.

22. To realize economies of scale for cost-effective operation, many of the small colleges with inferior programs and library resources should be merged into larger units or be incorporated with the universities or better established institutions.

Justification: This type of action is necessary to rectify some of the problems found in PNG colleges.

23. A minimum of one full-time qualified librarian and two trained assistants should be required for every teachers college library. A minimum of one full-time qualified librarian and one trained assistant should be required for each of the technical, nursing, and special colleges.

Justification: Without at least one qualified librarian in each college, little improvement can be anticipated. To offer necessary services, every college should have a trained assistant as well. Many of the weakest libraries visited by the consultant had no full-time librarian responsible for book selection, ordering, cataloging, advising users, teaching of library skills, etc.

24. The position classification and salary scale for library staff should be uniform and should be comparable to teaching staff with equal educational requirements and qualifications. There needs to be a clear career path for promotion and movement for both professional and support library staff. The staff classification and fringe benefits should be made equitable with university libraries.

Justification: The disparities in position classification and salary for library staff are found between university libraries and the National Library, between universities and colleges, and between librarians and teachers in colleges. The staff in the National Library also has no housing. This cause morale problems and discourages the recruitment of the best people to enter the library profession.

25. Opportunities for in-service training and continuing education should be made available to college librarians to acquire new knowledge and skill for modern library and information services. The existing programs in the UPNG Department of Library and Information Studies should be expanded to meet such needs.

Justification: The improvement of library and information services in the nation requires the steady supply of well educated and trained library personnel at every level. It also requires the programs and opportunities for in-service training and continuing education to upgrade the knowledge and skills in a rapidly changing profession.

26. For each teachers college library, a minimum of 500 new books, and 50 audio-visual kits of relevance to the curriculum should be added to the collection each year and at least 50 journal subscriptions maintained. For each technical, nursing, and special college library, the minimum requirement should be adding 250 new books and 25 audio-visual kits of relevance to the curriculum each year and maintenance of 25 journal subscriptions. These materials should be carefully selected (rather than happenstance gifts) to support the curriculum and should be cataloged for easy access. Funding for acquisitions and cataloging are critically needed to remedy the outdated collections found in most of these libraries.

Justification: About 90% of the collections in college libraries were found to be outdated. These minimum requirements will assure new and relevant materials for the libraries (and faculty and students whom they serve) which are badly in need of major infusion of new blood.

27. Centralized acquisitions and cataloging for college libraries should be explored to afford savings in both manpower and costs. For example, many library vendors abroad can provide attractive discounts for volume acquisitions. They can also provide cataloging service at little or no additional cost. With the establishment of PNGLINET, centralized and shared cataloging services can ease the manpower scarcity in small libraries. The National Library, in recent years,

has provided central acquisitions and cataloging service for public and school libraries. It needs funding from both the National and provincial governments to sustain such a useful service.

Justification: Centralized acquisitions can reduce costs and facilitate the cataloging process. Centralized cataloging helps to standardize cataloging practices while facilitating the creation of national bibliographic database.

28. To make better use of audio-visual materials, all college libraries should have a room equipped with appropriate A-V equipment. Teachers should be encouraged to use the room and to incorporate A-V materials into their instruction. The room and equipment should be well maintained.

Justification: A functional college library should also be the learning resource center where a wealth of audio-visual materials are available for teaching and learning. Ideally, such a resource center should be an integral part of the library and the instructional program.

29. Many of the library buildings in colleges badly need repair or expansion. Many require new and additional equipment and furniture. A survey should be made to determine such needs, and funding for the improvements should be provided.

Justification: Sufficient library space and adequate library facilities will enhance the library's ability to provide quality services.

Complementary Library and Information Services Nationally

30. The Library Services Coordinator of CHE should develop a system for the collection of annual statistics and other relevant information. These data should be stored in a computer and be analyzed for management purposes. A directory of library and information resources in higher education institutions should be published annually.

Justification: Gathering and analyzing useful statistics and information is necessary for planning and management. The publication of resources directories would make these resources better known and hence better used.

31. Similarly, statistical data and other relevant information for all government, public, special, and school libraries should be collected and kept by the National Library. A directory of these library and information resources should be published regularly. Such data compilations are valuable planning and management tools locally, regionally, and nationally.

Justification: It is a basic function of the National Library to gather this type of information and disseminate it through the publication of directories and other guides.

32. To encourage and provide incentives for sharing resources, those libraries with a net inter-library lending (i.e., number of items loaned to others minus number of items borrowed from other libraries) should receive a subsidy of five Kina per item from a special fund established by the Government.

Justification: It has been a common and effective practice in many countries to compensate and encourage resource libraries to lend more of their materials to other libraries. The subsidy enables these libraries to partially offset the costs of lending materials to others.

33. The National Library and the Department of Education should promote indigenous publications in all subjects, especially for children and young adult audiences.

Justification: This is needed to preserve and develop appreciation of the rich cultural traditions of the country through indigenous literature and publications.

34. Instruction in library and learning skills should be a part of the regular college curriculum and available to all students. This is especially important for teachers college students who will be transmitting these skills to future generations. It is recommended that CHE and the Department of Education develop necessary guidelines and implementation plans.

Justification: Library literacy is an important part of education and will foster independent studies and lifelong learning--essential skills in an age of rapid technological change.

35. Teachers college libraries should have a model collection for school libraries. It is necessary for the future teachers to become familiar with such a collection.

Justification: This will help prepare future school teachers to make better use of school libraries and resources in their teaching.

36. The Department of Education and the National Library should help the teachers colleges develop such a model collection and also should place such collection in every community school library in the nation. These collections should be updated annually.

Justification: For the 2,600 community schools in the nation, this will be a major but necessary and worthwhile investment by the Government.

37. The Department of Education, the National Library, and the Goroka Teachers College should develop a model collection for all the high school libraries. Such

a collection should be placed in every high school library and be updated annually.

Justification: For the 130 high schools in the nation, this will be a cost-effective way to strengthen their library collections.

38. The library of each UPNG Extension Center located in a province could ideally be established as a cultural center combining the public library, the vocational center library, and the University Center Library into one joint facility. Since the funding of all three are to be borne by the provincial government, such a shared facility will eliminate unnecessary duplication and be more cost-effective. Both the National Library and UPNG Library should assist in the design and establishment of these cultural centers.

Justification: There public libraries and vocational center libraries are close to many of the University Extension Centers. All are poorly funded by the provincial governments. Combining these will enrich the resources and services available to communities. Within a community cultural center, these services emphasize the importance of literacy and continued learning.

39. An experimental interactive video communication network for instruction should be installed between the Extension Studies of UPNG in Waigani Campus and a selected number of university extension centers. Such a video network will enable students in several extension centers be taught by lecturers in Waigani campus via the video network. Such a linkage can also be established between Goroka Teachers College and a selected number of community school teachers colleges.

Justification: The Government's emphasis on distance education could benefit from having such an interactive video communication network.

40. All university center libraries and teachers college libraries could use such a communication network for information sharing and dissemination. For this to be effective, each library should have a telephone with a direct line and a telefacsimile machine.

Justification: The libraries on campuses connected by the network could share resources much more easily. The lack of a separate telephone with a direct line in many college libraries reduces the ability of those libraries to communicate with each other for information or reference questions. The addition of a telefacsimile machine in every library will facilitate speedy transmission of needed information and documents.

APPENDIX 1

INDIVIDUALS CONSULTED/INTERVIEWED

In Port Moresby:

The Commission for Higher Education (P.O. Box 5117, Boroko)

Dr. Naomi T. Martin, Chairperson
Mr. Ruben San Mateo, Executive Director of the Secretariat and Deputy Chairperson

The Library Council

Dr. Moseley Moramoro, OPE, Chair
Dr. John Evans, Executive Secretary

Department of Education (P.S.A. Haus, P.O., Boroko)

Mr. J. Tetaga, Secretary for Education
Mr. M. B. Peril, Deputy Secretary
Mr. P. Baki, First Assistant Secretary-Standards
Mr. W. Pevias, First Assistant Secretary-General Educational Services
Mr. L. Taita, First Assistant Secretary-Special Educational Services
Mr. C. Ruvenvery, Assistant Secretary-Policy Planning and Budget

Port Moresby In-service College

Mr. J. Schofield, Principal

University of Papua New Guinea

- **Administration:**

Dr. John D. Lynch, Vice-Chancellor
Prof. Api. C. Maha, Dean, Faculty of Education
Mr. Md. Abdul Mannan, Director, Planning & Implementation Unit
Mr. Gervk John, Acting Director, Extension Studies

- **Michael Somare Library**

Ms. Florence J. Griffin, University Librarian
Mr. Elesallah, Periodicals Librarian

Mr. Joe Naguwean, New Guinea Collection Librarian
Mr. Joe K. Nom, Acting Archivist
Mr. Kametan Parkop, Library Officer
Ms. Eve Rannells, Law Librarian

- **Medical Library**

Ms. Rhonda Lakele Eva, Medical Librarian

- **Department of Library and Information Studies**

Dr. John A. Evans, Head
Mr. N. Amarasinghe, Senior Lecturer
Ms. Margaret Obi, Senior Lecturer
Mr. Ismael Isikel, Lecturer
Ms. Sam Kaima, Lecturer
Mr. Leah Kalamoroh, Teaching Fellow

National Library

Mr. Neil Nicholls, National Librarian
Mr. Daniel Paraide, Deputy National Librarian
Mr. Jim Maguire, Government Libraries Advisor
Ms. Nancy Lutton, Chief Archivist

Department of Agriculture and Livestock

Mr. Samuel B. Lahis, Director, Agricultural Education and Training
Ms. Bonnie Ontimo, Librarian

Department of Health

Ms. Rose Puipui, Librarian

College of Allied Health Sciences

Ms. Iboda Gibalu, Librarian

Department of Fisheries and Marine Resources

Mr. Ovia Tarube, Principal Education & Training Officer

Administrative College

Mr. Muepen Forepe, Librarian

In Rabaul:

UPNG East New Britain University Center

Ms. Mary Toliman, Director

Nonga School of Nursing

Sister Lucy Kotap, Principal

Gaulim Teachers College (United Church)

Samson Lowa, Principal
Ms. Eare Forova, Librarian

Kabaleo OLSH Teachers College (Catholic)

Mr. William Laisuit, Deputy Principal

Rabaul Public Library

Ms. Jessie Kuamin, Book Mobile Librarian

St. Paul Teachers College (Catholic)

Mr. Kubod Laiew, Deputy Principal
Mr. Joe Lipu, Lecturer and Librarian

Vudal Agriculture College

Mr. Pisou Popen, Principal
Mr. John Duigu, Deputy Principal
Ms. Flora Ungaia, Librarian

In Lae:

Balob Teachers College (Lutheran)

Mr. Kiane Towandong, Principal
Mr. Bert McNair, Deputy Principal

Mr. Anson Dom, Acting Librarian
Mr. Lyakin, Lecturer-Librarian

Forest Research Institute Library

Ms. Miriam Baru, Librarian

Lae Public Library

Mr. Ronny Ikon, Head
Ms. Miriam Daniel, Library Officer
Ms. Lucy Sevese, Library Officer
Mr. Hinagere Upeguto, Library Officer

Lae School of Nursing

Mr. Deveni Temu, Volunteer

Papua New Guinea University of Technology

Prof. S. H. Pearse, Vice Chancellor
Mr. Deveni Temu, University Librarian
Ms. Selina Owen, Deputy University Librarian
Mr.Lucas Dosung, Chief Cataloger
Barrah I-Nuli, Librarian (Cataloging)
Ms. Geeta Parmeshwar, Assistant Librarian (Cataloging)
Raphael Topaguv, Assistant Librarian
Ms. Mary Yamega, Assistant Librarian

Liklik Buk Information Center

Ms. Juanita Sabva, Information Assistant

Lae Technical College

Mr. Ebe V. Maeale, Principal
Mr. Ernie A. Saldlia, Deputy Principal (Academic)
Mr. Tini Wowis, Librarian

In Wewak:

St. Benedict's Teachers College (Catholic)

Mr. Andrew Simpson, Principal

Mr. Leonard Kinminja, Deputy Principal
Sister Vonnie Clarke, Librarian

Passam National High School

Mr. L. R. Dissanayake, Lecturer-Librarian

In Madang:

Madang Public Library

Ms. Elizabeth Bomai

Madang Teachers College

Mr. David Austin, Principal
Ms. Gandy Yakam, Lecturer-Librarian
Ms. Emma William, Library Technician

Madang Technical College

Mr. Patrol Maino, Principal

UPNG Madang University Center

Mr. Greg Murphy, Director

In Goroka:

UPNG Goroka Teachers College

Mr. Fred Iakopya, Acting Pro-Vice Chancellor and Principal
Ms. Rena Khan, College Librarian
Mr. John Thomas, Assistant Librarian

PNG Institute of Medical Research

Ms. Barbara Joyce, Acting Librarian

Melanesian Institute

Ms. Monica Tiotam, Librarian

Goroka Public Library

Mrs. Mamera Fore, Librarian
Miss Janet Omahe, Assistant Librarian

Goroka Technical College

Mr. Bruce Jowa, Principal
Mrs. Dora Nugi, Librarian

In Mount Hagen:

Highlands Agricultural College

Mr. Phillip B. Senat, Deputy Principal
Mr. Edward Edaw, Librarian

Holy Trinity Teachers College (Catholic Church)

Br. Peter Gilfedder, Principal
Br. William Shaw, Lecturer-Librarian
Ms. Kaipi Ogil, Librarian

Mt. Hagen Technical College

Mr. Richard Green, Principal

Nazarene College of Nursing (Nazarene Church)

Sr. Carol Bett, Nursing Tutor/Acting Principal

APPENDIX 2

NATIONAL LIBRARY SERVICE OF PAPUA NEW GUINEA

BASIC STANDARDS FOR COLLEGE LIBRARIES

Role

The principal function of any library in an eductional institution is to support and complement the curriculum. The college library has an additional role in fostering the reading habit which students may have discovered at community school. The library will often be the students only access to books and reading material. Students need this access if they are to maintain their literacy skills and if the reading habit is not to be lost irrevocably. Libraries should not be looked upon as an extra. They should be seen as an integral part of the college structure. The students learning process should not be limited to the purely vocational skills taught at the college.

1. Library Facilities

A library room a least the size of a classroom that can be used for library activities.

i) Every college should have as a minimum provision the basic works and supply high library building.

ii) Study space for 25 students or 10% of the enrolment whichever is greater.

2. Stock Provision

A minimum level of book provision should be 5 good quality books per student. The material must be selected very carefully in order that it best meets student needs. The National Library Service is prepared to assist in selecting suitable materials.

3. Library Use

i) A minimum of one hour per week per class

ii) Library to be open for pupils at lunch time and for one hour after classes.

4. **Staffing**

i) That a qualified librarian, that is someone holding a Diploma in Library Studies or the equivalent should be employed to run the library.

ii) As an interim measure one instructor to be appointed teacher librarian to look after book ordering, planning library activities and fund-raising.

iii) All instructors to be involved with the library with each instructor taking his/her class into the library for at least one hour each week

5. **Training Instructors**

i) All college instructors should receive a thorough training in organising and using a library whilst at college.

ii) Attendance at provincial workshops held by regional school library advisers should be obligatory for the designated instructor from each college involved.

6. **Book Funds**

To build and maintain a collection of 5 books per head, at least K10 per head per year would be needed. The library should be funded jointly by the National Department of Education and the college itself.

APPENDIX 3. Library and Information Resources in the Six Major Libraries

Library	Location	Agency	Collections			Material Budget	No.of Staff	Computer Applications
			Books	Journals	A-V			
National Library	Port Moresby	Education Department	45,000	400	4,500	N/A	80	Cataloging, Nat'l. Bib., CD-ROM Search- Bookbank, BIP Plus, Bibliofile, ERIC, Online Search-Dialog, Local Databases
University of PNG					N/A			
Main Library	Port Moresby	Comm. for Higher Educ.	400,000	1,500		K590,000	N/A	Cataloging, Circulation, COM, Microfiche Catalog, Online Search-Dialog, Local Databases
Medical Library	Port Moresby	"	46,000	380	N/A	N/A	"	Cataloging, COM microfiche catalog, Online Search of Medline
Goroka Teachers College	Goroka	"	65,000	300	1,000	K70,000	"	Cataloging, COM Microfiche Catalog, CD-ROM Search-ERIC plus Bibliofile, Online Search-Dialog
University of Technology	Lae	"	120,000	2,000	2,400	N/A	"	CD-ROM Catalog, Online Search, CD-ROM Search
Administrative College	Port Moresby	Personnel Management	46,240	646	305	K27,000	12	Nil

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APPENDIX 4. Library and Information Resources in the Teachers College Libraries*

Library	Location	Agency	Collections			Material Budget	No.of Staff	Computer Applications
			Books	Journals	A-V			
Balob T. C.	Lae	Lutheran/ Anglican	19,500	30	N/A	K 3,000	2	Cataloging and word processing
Dauli T. C.	Tari	Evangelical Alliance	32,000	25	100	K 1,900	3	Nil
Holy Trinity T. C.	Mt. Hagen	Catholic	12,000	41	N/A	K 4,800	2	Cataloging and Circulation
Gaulim T. C.	Rabaul	United Church	4,000	4	N/A	K 2,000	2	Nil
Kabaleo T. C. (for Women)	Rabaul	Catholic	5,000	8	N/A	K 700	0.5	Nil
Madang T. C.	Madang	Dept. of Educ.	24,000	26	N/A	K 2,500	2	Cataloging
Port Moresby Inservice College	Port Moresby	Dept. of Educ.	40,000	82	N/A	K 6,900	5	Nil
St. Benedict's T. C.	Wewak	Catholic	3,000	28	N/A	K 2,000	2	Cataloging, Circulation, and Online Search
St. Paul's T. C. (for Men)	Rabaul	Catholic	2,719	7	N/A	K 2,000	1	Nil
Sonoma Adventist T. C.	Rabaul	Seventh Day Adventist	5,300	17	N/A	K 1,500	0.5	Nil

*Notes: All these colleges have an enrollment from a low of 119 to a high of 327. The average is 178.
Students are admitted after the completion of 10th grade and the duration of study has just been expanded from two years to three years.

APPENDIX 5. Library and Information Resources in Other College Libraries

Library	Location	Agency	Collections			Material Budget	No.of Staff	Computer Applications
			Books	Journals	A-V			
Agriculture/Fishery/Forestry:								
Highland Agri. Coll.	Lae	Agri. Dept.	3,000	15	N/A	0	1	Has PCs in Library
Popondetta Agri. Coll.	Popondetta	"	10,160	35	N/A	0	1	Nil
Sepik Agri. Coll. (closed in 1990)	Maprik	"	8,503	N/A	N/A	K 3,000	1	Nil
Vudal Agri. Coll.	Rabaul	"	7,000	N/A	N/A	K 200	3	Nil
National Fisheries Coll.	Kavieng	Fisheries Dept.	6,077	N/A	82	0	2	Nil
PNG Forestry College	Bulolo	Forestry Dept.	16,000	N/A	N/A	N/A	1	Nil
Nursing:								
Lae School of Nursing	Lae	Health Dept.	N/A	N/A	N/A	0	0	Nil
Nazarene School of Nursing	Mt. Hagen	Nazarene Church	1,000	N/A	N/A	0	0	Nil
Rabaul School of Nursing	Rabaul	Health Dept.	N/A	N/A	N/A	0	0	Nil
College of Allied Health Sci.	Port Moresby	Health Dept.	1,400	0	N/A	0	1	Nil
Technical:								
Goroka Tech. Coll.	Goroka	Educ. Dept.	1,500	0	0	0	0	Nil
Lae Tech. Coll.	Lae	Educ. Dept.	7,110	1	0	0	1	Nil
Madang Tech. Coll.	Madang	Educ. Dept.	N/A	N/A	N/A	0	0	Nil
Mt. Hagen Tech. Coll.	Mt. Hagen	Educ. Dept.	2,500	0	0	0	0	Nil
Others:								
Civil Aviation Training Coll.	Port Moresby	Civil Avi. Dept.	1,700	40	0	K 5,000	1	Nil
Divine Word Inst.	Madang	Divine Word Inst.	17,000	40	N/A	K12,000	2.5	Nil
Elcom Training Coll.	Port Moresby	Elect. Comm.	1,500	62	450	0	1	Nil
Pacific Adventist Coll.	Port Moresby	Seventh Day Adventist	25,653	152	1,400	K20,000	5	Catalog Cards & labels,
Police Training Coll.	Port Moresby	Police Dept.	9,890	25	N/A	K 6,500	2	Nil
PNG Defence Force Coll.	Lae	Defence Dept.	5,716	N/A	0	0	1	Nil

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